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Thach, Shelby

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UNIVERSITY OF CALIFORNIA SAN DIEGO

The Livingness of Light: A Case Study on the Lighting Design of *Dance Nation*

A Thesis submitted in partial satisfaction of the  
requirements for the degree Master of Fine Arts

in

Theatre and Dance (Design)

by

Shelby Thach

Committee in charge:

Professor Christopher Kuhl, Chair  
Professor Lonnie Alcaraz  
Professor Robert Brill  
Professor Victoria Petrovich  
Professor Ravi Ramamoorthi

2023

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The Thesis of Shelby Thach is approved, and it is acceptable in quality and form for publication on microfilm and electronically.

University of California San Diego

2023

## DEDICATION

To my family – thank you for your continued support of my pursuance of a career in the arts, even if you might not know exactly what I do.

To my friends – thank you for believing in me and encouraging me to keep going when I doubted myself. Thank you for all the crossword puzzles, walks to get lunch, and late nights at the office. 🍌

To the UCI Lighters – thank you for sparking my love for lighting and answering all my Vectorworks questions. Zot zot zot!

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File 1. Thach\_DN\_Script\_Treatment.pdf



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To my mentors – thank you for helping me find who I am in this industry.

## ABSTRACT OF THE THESIS

The Livingness of Light: A Case Study on the Lighting Design of *Dance Nation*

by

Shelby Thach

Master of Fine Arts in Theatre and Dance (Design)

University of California San Diego, 2023

Professor Christopher Kuhl, Chair

Lighting design, like scenic and costume design, is a visual form of art. However, unlike scenic and costume design, lighting is not tangible. Because of this, we oftentimes cannot have literal representations of what a playwright describes in their script. Of course, when a script describes a sunny day, a cloud template could be projected onto the set, or when a play is set in someone's home, practicals could be added to illuminate the space. However, a play usually extends beyond its setting — there are characters who inhabit the space to tell the highs and lows of the story. How then, does one design with light?

In my creative process, the main focus of my design is the emotional arc of the story. It is important for me to pull from my own personal life and emotions, so I am able to inform my

designs with firsthand experience. Because my work relies heavily on my personal experiences, it is important to me that a show's creative team properly represents the story being told. When I have a direct connection to the script, my job becomes more than just turning the lights on; I am able to make the lighting an extension of myself, thus an extension of the characters in the play. In turn, the lighting almost becomes a character of its own. As Robert Edmond Jones describes it, it is "the livingness of light."

In the following thesis, I will describe my creative process of translating text into lighting design through a case study of UCSD's Fall 2022 production of Clare Barron's *Dance Nation*.

## Introduction

Clare Barron's *Dance Nation* follows the girls of Harrington Danceworks and their journey to do whatever it takes to make it to Nationals. As the girls dance their way through each round of competition, they also learn to navigate the changes their bodies are experiencing while growing up. Because the play is told through the perspective of prepubescent girls, it was important for our director, Emily Moler, to gather a team with as many female collaborators as possible. From pre-production to final dress rehearsal, it was evident that my personal experiences and point of view as a woman played a pivotal role in my design process.

Early in my lighting design career, I was introduced to Robert Edmond Jones's book on design, *The Dramatic Imagination*. Since then, I have resonated with Robert Edmond Jones's commentary on lighting, in which he states: "We have our choice of lighting a drama from the outside, as a spectator, or from the inside, as a part of the drama's experience... We light the actors and the setting, it is true, but we illuminate the drama. We reveal the drama. We use light as we use words, to elucidate ideas and emotions." Jones's words are what marks the difference between lighting a stage versus designing a stage with light. While it is important to consider external factors, such as location and time of day, it is the designer's interpretation of the emotions within the characters and text that make the design unique. This seemed especially relevant for *Dance Nation*, as the basis of my design was centered around my own preteen years.

## Lighting Design Process

During one of my early design meetings with the director, we quickly established a question that expressed a common goal between the both of us — how do we portray the emotions of teenage girls that are so powerful, they burst through the seams of reality? I thought about how I would answer this question as I read through the play. It would later become an anchoring statement that I constantly referred back to once tech rehearsals started, as it allowed me to quickly adapt to the new discoveries and ideas that came up.

Taking that question into consideration, I began my design process for the play. One of the first documents I create in my process is called a Script Treatment. In a Script Treatment, I begin with an overall design concept for the play with several photos that support those ideas. In the case of *Dance Nation*, I divided the play into three different worlds. Going back to the idea of how to portray the girls' emotions bursting through reality, I first had to define what "reality" was. To me, the first world was defined as the cutthroat environment that Dance Teacher Pat creates in his studio. I imagined this world to be a cold white and shadowless, like the girls were stuck in a fluorescent hell. The space felt vast and open; there is nowhere to hide and all the girls' insecurities and flaws are constantly exposed. The second world was the world of the girls' inner selves. In the play, the girls' emotions cause them to act feral — their hormonal energy bringing them back to a fierce, primal state. I wanted to show this energy through lighting by using unnaturally saturated colors coming from an extreme side angle to highlight and distort their bodies. The last world was that of the dance competitions. Those moments differed greatly throughout each competition the girls went through, including an upbeat tap number and a serious piece about Gandhi, so the lighting ranged from flashy effects to more somber and muted looks.

Having defined the three major aspects that make up the play, I continued to dissect it more specifically in the subsequent pages of my Script Treatment. In the rest of the document, I broke down the play by scene and included more detailed descriptions and images of what the lighting would look like or feel like. After working through the entire script, I realized that I shared many of the same experiences as the characters when I was growing up, such as getting my first period and having to tell my mom or having my friendships be strained because we were all competing in the same sport. Knowing exactly what it felt like to go through these things, I had a comprehensive understanding of the emotions I needed to portray through lighting. The next step was to think about these moments from a more technical point of view, through angle, texture, and color.

## Defining Angle, Texture, and Color in Lighting

Jones's description of lighting a drama from the outside versus the inside comes into play when I am thinking of angle, texture, and color in a design. While I do take both into consideration, I heavily focus on how to light from within. One of the biggest elements that I consider when lighting a scene is how the shadows fall on the set and the actors; this translates to what angle a light is placed relative to the subject being lit.

Beginning with the external factors of the play, I use both photo and observational research to give myself context on how to transform what I see in real life into a specific angle of light for the stage. For example, since most of *Dance Nation* takes place in the girls' dance studio, I studied images of actual dance studios and concluded that many of them use some type of fluorescent or LED ceiling-mounted fixture to create bright white lighting. Taking that observation, I can begin plotting — calculating the photometrics of a light to figure out where it best fits in the theater space. I decided to plot lights coming directly from above (down lights) and lights from a steep side angle (high sides) as the main angles of light for the dance studio scenes (Figure 1.1). Next, I consider what the lighting from inside is — focusing on the mood of a scene or how a character is feeling internally. I often think about how specifically I want the shadows to fall on a person's face and body, and what that reveals or conceals about the character in that moment. This is where the more extreme side or back angles are used, as those directions of light are not typically found in the natural world. In a play filled with angst and heightened emotions, I had the perfect opportunity to personify and exaggerate what the shadows looked like on the actors in certain moments (Figure 1.2).



**Figure 1.1** The Dance Studio



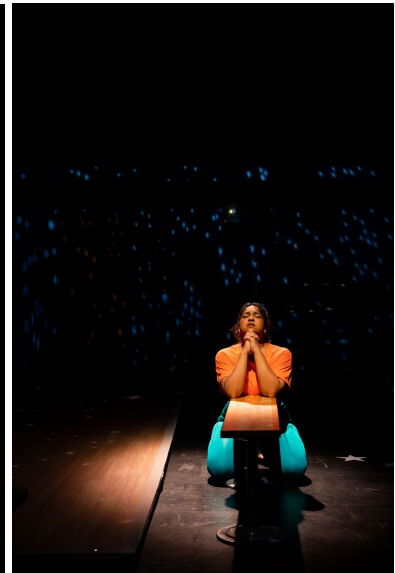
**Figure 1.2** Zuzu Alone After Competition



Relatedly, I think about how shadows affect the environment of a scene. Again, Jones's statement is relevant here; sometimes, I use these environmental shadows, or gobos (steel templates with an image or pattern cut into it), to represent what is physically present in the world of the play. For instance, the shadow of leaves to imply the presence of a tree if the play takes place outside. Oftentimes, however, I use gobos to light from within — as an extension of a character's mood or the tone of the scene. There are multiple factors to consider when choosing gobos — is it a specific image or a breakup texture? Is it an organic or linear texture? Is there a lot of open space or negative space? Is it a soft, fuzzy image or a clear, sharp one? In this case, I landed on a starry template system, which was used both during the nighttime scenes and to create a more delicate atmosphere when the girls were yearning for their dreams, thinking of the past, or talking about sensitive topics, like getting their first period (Figure 1.3, Figure 1.4).



**Figure 1.3** Full Stage Star Texture



**Figure 1.4** Connie Praying

The third element I consider is the color of a light. Like angle, I also think about the external factors of the play and use photo and observational research to select colors. For example, if a scene takes place during the sunset, I'll use photos of sunsets as inspiration for the types of ambers, pinks, blues, and purples I choose for the lighting on stage. With lighting from the inside, I am able to be more creative and flexible with my color choices, as these choices lean more into what emotion a color represents. My color choices for emotional lighting are usually more personal to me, as my background influences what I choose. In the several scenes where the girls go through a feral transformation, I decided to use extremely saturated reds and greens (Figure 1.5) to represent their inner animalistic sides because those colors tend to morph a person's body into something unrecognizable.



**Figure 1.5** Feral Transformation

Even when choosing “white” light for a scene, I have to think about how color temperature affects the mood. Typically in lighting design, Kelvin is the unit used to refer to color temperature. In Kelvin, lower temperatures equate to ambers, while high temperatures equate to blue-ish white light. In *Dance Nation*, I used colder whites (5000°K - 6000°K) to show harsher environments, like the dance studio (Figure 1.6). These higher color temperatures make the space appear more sterile and uninviting because of how steely they look. I used warmer whites (2000°K - 3000°K) to show more heartfelt environments, like the girls’ intimate moments in their bedrooms (Figure 1.7). The lower color temperatures make the space appear more cozy and heartwarming because of how gentle they look.



**Figure 1.6** Dance Studio, Cold White Lighting

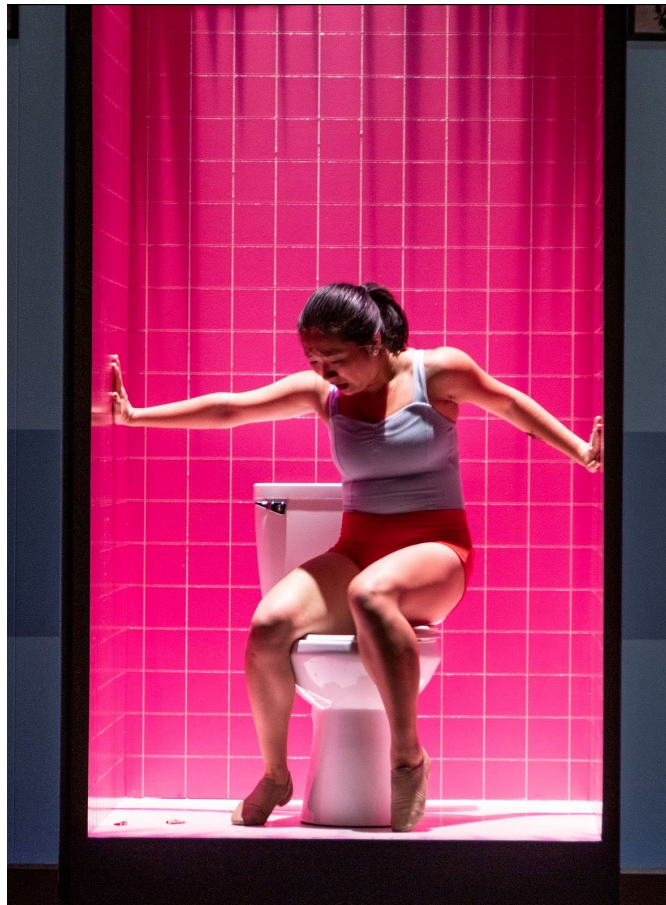


**Figure 1.7** Bedroom, Warm White Lighting

## A Study on Specific Moments in Dance Nation

The following images include a more in-depth deconstruction of the angles, textures, and colors I used to bring *Dance Nation* to life.

### 1. *Zuzu in the Toilet Stall*



**Figure 2.1** Zuzu in the Toilet Stall

In this moment, the character Zuzu overhears an argument between her mother and Dance Teacher Pat. Getting increasingly anxious, she grows fangs and bites a chunk of her arm off and rejoins dance practice, acting as if nothing happened.

While speaking with the director about this scene, she explained that Zuzu was committing an act of self harm as a way for her to regulate her emotions. This brought me back to my own past, as I have also used self harm to control my anxiety. I instantly understood what

the moment was supposed to feel like — a chest so tight it feels like it's going to explode, breaths so short that it feels like choking, and a headache so debilitating that you can't think clearly. And then, a big release.

Beginning to translate that familiar feeling of anguish into something visual, I decided the main source of light would be a single light coming straight down into the stall. This would be a stark change from the previous look that was more rooted in reality, where a flatter front light was on to give clearer visibility to her face. Using the down light, I could create intense shadows on Zuzu's body, especially when she looks down. I wanted it to feel like a pressure that was pushing down on her. To add onto that feeling, I decided to use a spiky vignette gobo, seen on the wall, to emphasize the peak of her anxiety as she bites into her arm. The cold, white color of the light adds intensity to the moment, as if her searing hot energy is coming out.

## 2. *The Girls Before Competition*



**Figure 2.2** The Girls Before Competition

Backstage at the Philadelphia competition, the girls are devastated and intimidated to learn that one of the other teams has boys in their group. To uplift the girls, Ashlee (kneeling down center) begins to describe the explicit things they could do to the boys because they are better and capable of beating them in competition. This triggers a feral transformation within the girls, and they all join in with chanting and yelling.

Throughout all of our pre-production conversations, the director often told us to think about our own middle school selves. Thinking back to that time in my life, I remember those years being a pivotal time in my life where I was discovering who I was. At that time, I discovered my love for rock and alternative music — specifically the band My Chemical Romance. Becoming obsessed with everything about them, I found a quote from their lead singer

and used it as a mantra to carry myself — “Be yourself, don’t take anyone’s shit, and never let them take you alive.”

In lighting this scene, I understood how the girls felt when they threw away their fear and faced their problems head on, with a ferocity that felt like it was a life or death situation. I started with a saturated purple down light, which almost acted like blacklight and gave the girls’ skin an unnatural glow. The angle coming from straight down also created heavy shadows in their eyes, making them look demonic as they described how they’re going to destroy the other team. To give their bodies some depth, I added side light on either side of them. The side light was able to bring back dimension to their figures while still keeping the center of their bodies in shadow, and the red helped to prevent them from getting flattened in the deep, ultraviolet lighting. Looking at the composition so far, it still felt like there was some lingering flash blindness from the extremely saturated colors, which was causing difficulty for my eyes to focus on anyone. I decided to add another down light, this time one of the lights I was typically using for the dance studio, and it tied the image together. Although it reads as plain white in the dance studio, the colors mixed in with the purple and red to create a grotesque yellow-green, which helped further highlight their bodies and express their bloodthirsty energy.

### 3. *Baby Sexy Robots Dance*



**Figure 2.3** Baby Sexy Robots Dance

After Zuzu exits the bathroom, the girls begin to rehearse their number for the dance competitions. Fueled with animalistic energy, the girls perform a grittier version of their routine; Barron describes them as “baby sexy robots.” Throughout the play, there are hints of the girls’ inner selves trying to come out, only to be quelled quickly. This moment, however, is the first time they fully transform, growing fangs and thrashing wildly.

Thinking back to the question the director and I were trying to answer, I wondered how I would distinguish this scene as an exponential expansion of what we had seen previously. I turned to my other collaborators for ideas, including set designer Raphael Mishler. Initially, Raphael had already come up with potential places on the set to include electric elements — he described it as “electrifying the stage.” I used this as an opportunity to connect the two ideas.



Compared to the rest of the world that is lit mainly with incandescent light, I thought that the garish quality of LED lighting would be a perfect representation of the intense emotions the girls were feeling. Ultimately, we decided that LED tape would be embedded into the edge of the dance floor and in scattered 3-foot strips running up the two trusses. Although the Baby Sexy Robot dance doesn't happen until halfway through the show, I made the conscious decision to refrain from using the LED tape until this moment, to line up with the first time we see the girls' full transformation. To support the idea that the girls' emotions are so powerful when they burst out, I added strobing and color changing effects to the LED tape, as if a power surge was happening.

Similar to the previous photo, I used deeply saturated colors to fully immerse the girls into their vicious inner world. On top of the unnatural ultraviolet glow from above, I layered on side light to carve their bodies out of the background, which particularly helped for this scene since it was a dance number. The green highlighted their bodies in a way that made their movements especially fierce. Finally, I chose red footlights, both to bring out the demonic looks in their faces and get a low enough angle of light to project the girls' shadows onto the back wall, as stated in Barron's stage direction of the girls' shadows growing longer.

## Conclusion

After developing my design process over the last three years of school, *Dance Nation* was the product of my trials and errors of developing a clear and communicative way of expressing my ideas to my collaborators while still preserving the creativity of my craft. Sharing my Script Treatment with my team gave them a starting point to start a dialogue about my designs and how they related to the play. It provided them with images to accompany the text descriptions of the lighting ideas I pictured in my mind and in turn, they were able to give me feedback on specific moments before we even got to tech rehearsals.

Working on *Dance Nation* not only helped me understand how vital collaboration was to realizing my designs, but also helped me understand why my point of view as a designer is so important to my work. Without the scenic expertise of Raphael, my idea of physicalizing the girls' emotions bursting through reality would not have been realized. His initial thought to have LED tape embedded into the set to "electrify the stage" provided the perfect vessel in which to combine my ideas. Without insight from Emily, the director, I would not have been able to unlock my inner preteen self and design from a place that felt genuine to the girls in the play. Because much of my process includes finding memories or emotions from my own life that I can use to relate to each moment of the play, I was excited that our processes could be developed in tandem. I could see that my perspective as a woman was crucial, as those shared experiences of growing up as girls was what Emily was relying on to communicate her ideas. She was able to frame the text in a way that helped me find key moments in my life to inspire my designs. Through my collaborations, I had all the tools necessary to translate the text of *Dance Nation* into distinct combinations of angles, colors, and textures to create a successful lighting design that truly breathed life into the play.

## WORKS CITED

Barron, Claire. *Dance Nation*. Bloomsbury Publishing, 2018.

Jones, Robert Edmond. *The Dramatic Imagination*. Taylor & Francis, 2004.